



Best science guides us

Our health and safety scientists conduct pioneering studies that help improve safety for workers and the public.

Kids play on lawns a lot, whether at home, school, or in parks. Turf is often treated with pesticides to control weeds and other pests. If residues remain on the grass, how much gets on clothing or skin? There are several methods for estimating this, but how do they relate to one another, and which is the most accurate? Knowing this is critical for assessing potential human exposure and, in turn, for developing rules to protect people – especially children – from harmful exposures.


To get answers, DPR's Worker Health and Safety Branch scientists in September 2004 went to a Yolo County sod farm to "roll in the grass." Actually, they used two types of rollers pushed across cloth-covered grass to transfer residue from turf to cloth.

DPR staff had first applied a pesticide to the turf, in both granular and liquid form, at various application rates. After covering sections of treated grass with pieces of cloth, they used two kinds of "California rollers." The test simulates human exposure to pesticide residue. The rollers are of a known weight, pushed over a known area, a specific number of times.

(DPR has long been an innovator in exposure assessment methods. The rollers are modified versions of a device originally developed by a DPR scientist in the early 1990s to measure surface residues and is now a standard industry method for this kind of residue sampling.)

The pieces of cloth were then carefully picked up and sent to the chemistry laboratory for analysis. Statistical analyses will be done to determine whether the sensitivity of the two California roller methods differs, and whether the difference is affected by formulation or application rate.

Exposure data submitted to DPR by industry uses both kinds of modified California rollers, and DPR needed a way to compare the two methods. We also needed to know how standard tests done on liquid formulations compare to results for a granular formulation of the same pesticide. Our evaluation and analysis will be completed in 2005.



For nearly three decades, our scientists have conducted unique studies, designed to increase our knowledge of how workers and others are exposed to pesticides and, in doing so, improve protective measures.